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Description of the Drawings

Fig. 1 is a view of the aquatic weed suppressor in position on the bottom of a water body. It illustrates the effect of the buoyancy of the plastic where it forms a convex surface anchored by the lateral hold down means as well as some of the plethora of possible gas release port configurations.

Figure 2 is a view of the aquatic weed suppressor in position on an irrigation ditch showing the hold down means.

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Discussion of Prior Art Made of Record

US 6,558,079 Kozak et al This has to do with a procedure for covering a landfill.

In the Discussion of the background of the invention the author states explicitly " The present invention is directed to a method and apparatus for laying a film on a landfill, and more particularly to a method and apparatus for compacting the landfill, spraying a pesticide upon the compacted waste, laying a biodegradable film over the landfill, and depositing ballast on the film." This patent has nothing to do with preventing the growth of aquatic weeds and if one tried to use their contraption to this end, it would self destruct. The approach is not appropriate. On page 5 where you reference patent 6,558,079 you discuss things which I can not find in the patent. Are we talking the same patent?

US 6,755,596 Schibi This has to do with a waterproof permanent canal liner mechanically connected to the walls of the canal.

Under the description is stated " This invention relates to a plastic lined canal and more particularly to a canal having a plastic liner therein for the purpose of reducing water leakage from the canal." The liner is "mechanically fastened" to the canal walls. This is not a weed suppression system; if there were weed growth (not in a cement lined canal) there is no system for the release of decomposition gasses. They do not even consider transverse hold down means. Their system is permanent. Nothing disclosed here is relevant to this invention.

US 6,357,964 DeGarie This has to do with a cover for a waste water pool.

The field of this invention "pertains to drainage systems for flexible floating covers covering large wastewater reservoirs". It covers drains and pipes over a plastic film that is attached to the sides of the reservoir. While there are "weight lines" they are arranged in herringbone patterns which configuration would not be appropriate for the subject of this patent application and they are attached to the sides of the pool - there are no sides in a lake and no attachment is intended. The "troughs are indentations in the plastic sheet made by the weight lines for the purpose of collecting rain water.

US 4,565,468 Crawford Moisture impervient barrier and method for making same.

"The object of this invention is the provision of a moisture impervient material which prevents the seepage of water and the leaching of contaminants from ponds, reservoirs, dams, municipal and industrial waste lagoons, burial sites and other applications. This patent relies on a clay like material called bentonite to form a lining on the bottom of water bodies to stop seepage. It has nothing to do with aquatic weed control and the material used is not at all appropriate for this invention.

US 4,344,722 Blais Moisture barrier for pools and small ponds.

The same area and techniques essentially as the Crawford patent.

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US 4,405,264 Brady et al Moisture barrier for pools and waterways.

"This invention relates to a method of providing an earth covering useful for water harvesting". It is the same as the previous two patents in that it involves putting down a barrier in a pool to prevent seepage of the water. The difference is that the barrier is made of cloth coated with silicone instead of the clay in the previous two patents. While it will interfere with weed growth in the short term, it will quickly be covered with silt upon which weeds will grow. Also if there is any gas emission from the decomposition of vegetation below the barrier, the barrier will be lifted and become ineffective.

US 6,141,993 / US 5,417,010 / US 4,982,526 / US 4,239,824 / US 4,044,501 All have to do with screens for grass transport, seed propagation, and lawn applications. They do not apply to the subject of this invention.

WO 00/30428 Daios A plastic cover to improve the yield of Asparagus.

This certainly doesn't sound like anything particularly novel but Daios does talk about longitudinal tubes made by "welding the superimposed parts of the plastic sheet together lengthways". In the now omitted "Discussion" this method of forming the "tubes" was suggested but is not the "Preferred Embodiment" and therefore does not show in the present submission.

US 4,518,280 Fletcher A heavier than water plastic sheet with a plurality of V shaped incisions.

This is the closest to our invention of any of the references so far reviewed. The major difference is that the plastic sheet of my invention is held to the bottom with integral transverse weights and the gas escape ports are located where the transverse weights direct the gases. Fletcher assumes the plastic sheet to have a specific gravity greater than the water in which it is immersed; meaning that gasses of decomposition will accumulate randomly and tend to lift the plastic equally randomly; therefore he includes a plurality of slits more or less randomly distributed. The flap design Fletcher discloses is intended to provide shading of the substrate from the sun. Something like this is required when the plastic lies on the substrate. In my design, flaps are not required because the shading plastic sheet is elevated above the lake bottom by the bouncy of the plastic and as the sun travels from East to West it impinges very little on any one part of the substrate. Additionally in my design the plastic is secured to the substrate by the integral hold down means and does not rely on the addition of rocks to hold the plastic sheet in position. My design permits of ready installation and removal by the immediate property owner - something no one else can claim.

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Discussion of the claim revisions and examiner's critiques.

Examiner item 5.

Claims 3, 6, 8, and 9 have been modified to meet with the examiner's objections.

Examiner item 7.

Claims 1, 2, 3, 4, and 6 are rejected as being unpatentable under Kozak et al (US 6,558,079).

Are you referencing the same patent I am reading? I fail to see how this Kozak patent is at all relevant and I can not understand your references to its sections but I will analyze Patent # 6,558,079 by what seem to me to be the most pertinent parts.

The Kozak patent is related to "an apparatus for covering a landfill". It covers the equipment and methods of compacting a landfill on a daily basis and covering this compacted fill with a biodegradable polyolefin film.(A) The means for holding down the film is by "deploying a material onto the covering".(B) The film is biodegradable with the expectation that it "degrades quickly enough to reduce the potential for the buildup of gasses between fill layers".(C)

My analysis:

(A) My invention has nothing to do with equipment for installation - a simple row boat can do the installation job. The installation is not to be repeated daily. The film is not biodegradable. My invention involves the positioning of the device on the weeds on the bottom of a body of water and leaving it there until the weed growth has been terminated. There is no compacting involved.

(B) The means for holding down the sheet of plastic in this invention is integral with the plastic - additional material is not required.

(C) The plastic used in this invention is not biodegradable and there are slits incorporated in the right places to facilitate the passage of the gases of decomposition.

Additionally you state in the last paragraph of Item 7 "With respect to the specific gravity of the polymeric material, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to provide one or less specific gravity by controlling". Possibly, but so far all the effort has been to put down a material that will stay down and as a consequence of this "tunnel" vision, the plastic used for bethanic barriers has been heavier than water.

Examiner item 8.

Claim 5 is rejected as being unpatentable under Kozak et al in view of DeGarie (US 6,357,964).

DeGarie is talking about a floating impermeable cover over a relatively small wastewater pool; this cover being attached to the perimeter walls. Attached to the walls are "weight lines defining a herringbone pattern". (A) These weight lines then press down on the floating cover forming troughs into which rain water flows. (B) Excess rain water is drained off. The weight lines and the water filled troughs hold the floating impermeable sheet so that wind will not cause it to blow off the pool.

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DeGarie's weight lines are sections of pipe linked to each other with rope "such that each weight line is longitudinally flexible to follow the movement of the membrane cover". (C)

My analysis:

I do not see how Kozak applies here anymore than in the other claims.

I do not understand your statement "Obvious....to replace the hold-down means with the tubular shaped weight in order to hold the tubular weight together with side-by-side relationship for equal distribution of the holding weight". This invention does not require equal distribution of the hold-down weight, but for ease of installation and removal in a lake environment it does require that the hold down means be relatively rigid, certainly not the flexibility envisioned by DeGarie.

(A) In DeGarie the weight lines are not integral with the membrane as are the hold down means in this invention. They form a herringbone pattern; the hold down means in this invention are parallel to each other; it would be very difficult to install in a lake the weight configuration proposed by DeGarie.

(B) The purpose of the weight lines in DeGarie is to cause a trough in the membrane so as to accumulate water. The purpose of the hold down means in this invention is to hold the plastic to the substrate while also directing the gasses of decomposition to gas release ports.

(C) DeGarie's weight lines are pieces of pipe tied together with rope - hardly a tube. DeGarie is trying to keep an impermeable membrane on to the surface of a small walled pond; I am trying to keep a membrane, made permeable by the inclusion of gas release ports, on to the bottom of a relatively large body of water. My weights are integral with the plastic film; DeGarie's are laid on top of the film.

Examiner item 9.

Claims 7-11 are rejected as being unpatentable over Kozak et al in view of Fletcher (US 4,481,242).

My analysis:

Again, let me say, Kozak et al has to do with an apparatus to provide compression and temporary coverage of a landfill; it has nothing whatsoever to do with stopping the growth of subsurface aquatic weeds and nothing in it impacts my invention.

Fletcher has patented the shape of gas release ports in a plastic sheet held to the substrate by rocks and/or stakes. Fletcher's flap design is appropriate to prevent sunlight from reaching the substrate when the plastic sheet is lying flat on the substrate but is not required in this instance because the design is such that the openings are above the substrate and the light passing thru impacts on the weeds for only a very small amount of time. His gas release ports are essentially randomly distributed over the plastic sheet. In this patent I am providing for integral hold down means located in such a way as to direct the gases to simple gas release ports. These ports can take the shape of Fletcher's but simple slits are satisfactory with my design. At one point in Fletcher's "Background" discussion he

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mentioned possible impediment of water flow in irrigation ditches, no where else does he address the peculiar problems of such ditches and how his invention will cure these problems, except possibly in his Figure 10 which is included in the references made by the examiner. Since I am unable to pull up Figure 10 on the computer, I can make no comments save to say that aside for the one brief reference in Fletcher's Background statement, with no inclusion in his Claims, Fletcher provides no insight into the irrigation ditch weed problem. My approach is novel. For this ditch application, I go for the possibility of a higher than 1 specific gravity because of the particular conditions of the ditch environment.

Actually the closest patent I have found to my invention is the Elias et al patent US 4,577,996. Elias proposes the laying of a silicone rubber-coated fabric over the area where weeds are to be eliminated. His discussion is very pertinent to the area of my invention. The differences between the Elias approach and mine are (1) His barrier material is heavier than water; mine is lighter. (2) He relies on the porosity of his barrier to effect the release of the gases of decomposition; I rely on gas release ports cut into the barrier material at places where the gases of decomposition are directed. (3) His barrier is held to the substrate by not only its own weight but by the addition of rocks and wire stakes; my barrier is held to the substrate by integral hold down means - nothing extra is required. (4) Elias acknowledges a problem with algae affecting the gas permeability of the barrier and as a consequence the barrier's ability to stay in place; my slits are not affected by algae.

In summation: This invention is a devise different than any I have seen, used, or heard of for the control of subsurface aquatic weeds; a device intended to be installed and maintained by the property owner without outside assistance; as such it is light weight, easy for one or two people to install and all of the supplies are provided for the installation in one assembly.